



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,512	12/14/2001	David D. Madsen	C34.12-0026	5565

7590 01/12/2005

Christopher R. Christenson
WESTMAN CHAMPLIN & KELLY
International Centre - Suite 1600
900 South Second Avenue
Minneapolis, MN 55402-3319

EXAMINER

YODER III, CHRISS S

ART UNIT PAPER NUMBER

2612

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,512

Applicant(s)

MADSEN ET AL.

Examiner

Chriss S. Yoder, III

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/02, 11/02, 02/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

Claims 1-19 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. In this application the inventors listed include Madsen, Rudd, and Schoeneck. In co-pending application 10/793176 the inventors listed include Madsen, Rudd, Schoeneck, and Horijon.

Claims 1-19 are directed to the same invention as that of claim 1-19 of commonly assigned 10/793176. The issue of priority under 35 U.S.C. 102(g) and possibly 35 U.S.C. 102(f) of this single invention must be resolved.

Since the U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302), the assignee is required to state which entity is the prior inventor of the conflicting subject matter. A terminal disclaimer has no effect in this situation since the basis for refusing more than one patent is priority of invention under 35 U.S.C. 102(f) or (g) and not an extension of monopoly.

Failure to comply with this requirement will result in a holding of abandonment of this application.

Art Unit: 2612

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-19 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-19 of copending Application No. 10/793176. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The oath or declaration is unsigned. The examiner notes that applicant filed a response dated February 26, 2002 that states that the Combined Declaration and Power of Attorney executed by the inventor(s) is submitted at this time. However, the submission of this Declaration and Power of Attorney executed by the inventor(s) is not present in the case file.

Claim Objections

Claims 8, 14, and 15 are objected to because of the following informalities:

1. Claim 8 recites the limitation "the *telecentric* optical system" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

The examiner believes that this should read "the optical system", and will be examined as understood by the examiner.

2. Claim 14 recites the limitation "the *telecentric* optical system" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

The examiner believes that this should read "the optical system", and will be examined as understood by the examiner.

3. Claim 15 recites the limitation "*additional* tangs" in line 2. There is insufficient antecedent basis for this limitation in the claim.

The examiner believes that this should read "tangs", and will be examined as understood by the examiner.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2612

1. Claims 1-7 and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US Patent # 5,457,492) in view of Orino et al. (US Patent # 5,210,645).
2. In regard to claim 1, note Sasaki discloses the use of an illumination and imaging system for acquiring an image of an illuminated target of interest (figure 2), system comprising a detector for receiving light and providing an electrical representation of an image (figure 2: 2), an optical system optically coupled to the detector (figure 2: 4-9), a stop disposed within the optical system and having an aperture for passing a portion of the light therethrough (column 4, lines 4-8), and a light source mounted between the target and the stop, the light source shining light substantially normally onto a surface of the stop, wherein light reflected from the surface of the stop onto the target forms light received at the detector (figure 2: 7; and column 4, lines 11-12). Therefore, it can be seen that the Sasaki reference fails to disclose that the stop has an asymmetrical feature about an optical axis of the stop. Orino discloses the use of a plurality of tangs extending into the aperture and arranged asymmetrically about the aperture (figures 1-2; column 2, lines 56-60; and column 4, lines 54-57). Orino teaches that the use of asymmetric tangs extending into the aperture are preferred in order to block off-axis fluxes passing through the aperture (column 4, lines 54-57). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of asymmetric tangs extending into the aperture as suggested by Orino.
3. In regard to claim 2, note Sasaki discloses the use of an illumination and imaging system as claimed in claim 1. Therefore, it can be seen that the Sasaki device lacks the

Art Unit: 2612

use of stainless steel to form the stop. Official notice is taken that the concepts and advantages of using stainless steel as a reflector are well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of stainless steel to form the stop in order to increase the durability of the stop.

4. In regard to claim 3, note Sasaki discloses the use of an illumination and imaging system as claimed in claim 1. Therefore, it can be seen that the Sasaki device lacks the use of a diffuse surface to form the stop. Official notice is taken that the concepts and advantages of a diffuse surface to create a reflector are notoriously well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of a diffuse surface to create the stop in order to scatter the light and reduce shadows.

5. In regard to claim 4, note Sasaki discloses the use of an illumination and imaging system as claimed in claim 1. Therefore, it can be seen that the Sasaki device lacks the use of a diffuse reflective coating on the stop. Official notice is taken that the concepts and advantages of a diffuse reflective coating are notoriously well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of a diffuse reflective coating in order allow the light to strike at appropriate angles of incidence such that the object is evenly illuminated.

6. In regard to claim 5, note Sasaki discloses a plurality of additional light sources mounted substantially coplanar with the light source (figure 3:7).

Art Unit: 2612

7. In regard to claim 6, note Sasaki discloses that the light source includes a Light Emitting Diode (column 3, lines 55-56).

8. In regard to claim 7, note Sasaki discloses a plurality of additional light source disposed to shine light substantially normally with respect to the surface of the stop (figure 2: 7 and figure 3: 7).

9. In regard to claim 11, note Sasaki discloses that the stop and the light source are enclosed within an enclosure having a reflective interior (column 4, lines 20-24; and figure 2: enclosure 6).

10. In regard to claim 12, note Sasaki discloses that the enclosure is cylindrically shaped (figure 3).

11. In regard to claim 13, note Sasaki discloses the use of an illumination and imaging system as claimed in claim 1. Therefore, it can be seen that the Sasaki reference fails to disclose that the detector is a CCD array (Sasaki only states that it uses a video camera, 2). Official notice is taken that the concepts and advantages of using a CCD in a video camera are notoriously well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of a CCD array because CCD's are light-weight, require little power, are inexpensive, and are more sensitive to light than the large, bulky, and power-hungry vacuum tubes previously used for television cameras.

12. In regard to claim 14, note Sasaki discloses that the light source is positioned within the optical system (figure 2: 5-9).

Art Unit: 2612

13. In regard to claim 15, note Orino discloses the use of a plurality of tangs extending into the aperture and arranged asymmetrically about the aperture (figures 1-2; column 2, lines 56-60; and column 4, lines 54-57).

14. In regard to claim 16, note Sasaki discloses the use of an illumination and imaging system as claimed in claim 1. Therefore, it can be seen that the Sasaki reference fails to disclose that the optical system is telecentric in object space. Official notice is taken that the concepts and advantages of using a telecentric optical system are notoriously well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of a telecentric optical system in order to properly focus the image on the image pickup device.

15. In regard to claim 17, note Orino discloses the use of at least one tang extending into the aperture and arranged asymmetrically about the aperture (figures 1-2; column 2, lines 56-60; and column 4, lines 54-57).

16. In regard to claim 18, note Sasaki discloses an illuminator comprising an enclosure having an optical axis passing therethrough (figure 2: 5), a stop disposed within the enclosure (figure 2: 8), the stop having a reflective surface and an aperture (column 4, lines 5-7), and at least one light source disposed within the enclosure (figure 2: 7) and adapted to direct light toward the reflective surface substantially normally to the reflective surface (figure 2:7). Therefore, it can be seen that the Sasaki device lacks the use of at least one tang that extends into the aperture. Orino discloses the use of at least one tang extending into the aperture (figures 1-2; column 2, lines 56-60). Orino

Art Unit: 2612

teaches that the use of tangs extending into the aperture are preferred in order to block off-axis fluxes passing through the aperture (column 4, lines 54-57). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of tangs extending into the aperture as suggested by Orino.

17. In regard to claim 19, note Sasaki discloses an illuminator having an alignable optical stop disposed within the illuminator enclosure (figure 2: 8). Therefore, it can be seen that the Sasaki device lacks the use of a feature arranged asymmetrically within the aperture. Orino discloses the use of tangs extending into the aperture (figures 1-2; column 2, lines 56-60; and column 4, lines 54-57). Orino teaches that the use of asymmetric tangs extending into the aperture are preferred in order to block off-axis fluxes passing through the aperture (column 4, lines 54-57). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of asymmetric tangs extending into the aperture as suggested by Orino.

18. Claim 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US Patent # 5,457,492) in view of Orino et al. (US Patent # 5,210,645), and further in view of Nagaoka (US Patent # 6,317,270).

19. In regard to claim 8, note Sasaki discloses the use of an illumination and imaging system as claimed in claim 1. Therefore, it can be seen that the Sasaki reference fails to disclose the use of an optical system including a first lens cell positioned between the detector and the stop. Nagaoka discloses the use of a lens cell positioned between the detector and the stop (figure 14c: G4). It is commonly known that the use of a lens between a detector and a stop are preferred in order to properly align the light to be

Art Unit: 2612

received by the detector. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Sasaki device to include the use of a lens between a detector and a stop as suggested by Nagaoka.

20. In regard to claim 9, note Nagaoka discloses the use of a baffle positioned between the first lens cell and the stop (figure 14c: G3; the examiner considers the lens G3 to be a baffle based on the definition of a baffle being "a usually static device that regulates the flow of a fluid or light" from The American Heritage Dictionary of the English Language, Fourth Edition).

21. In regard to claim 10, note Nagaoka discloses the use of at least one additional baffle positioned between the baffle and the stop (figure 14c: G2; the examiner considers the lens G2 to be a baffle based on the definition of a baffle being "a usually static device that regulates the flow of a fluid or light" from The American Heritage Dictionary of the English Language, Fourth Edition).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US006667762B1: note the use of an illuminator that used reflected light.

US006630998B1: note the use of an inspection device with a reflective coating to reflect light.

US006580449B1: note the use of a reflector made of stainless steel.

US006257735B1: note the use of a reflector.

Art Unit: 2612

US005825495A: note the use of an illuminator that used reflected light.

US006678058B2: note the use of an optical system.

US006731383B2: note the use of a telecentric optical inspection system.


US005684530A: note the use of an illuminator that used reflected light.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (703) 305-0344. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CSY
December 20, 2004


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600